

Fig. 1121D is a schematic representation of the dual spatial intensity modulation panel structure employed in Fig. 1121A, shown configured between two pairs of ultrasonic transducers (or flexural elements driven by voice-coil type devices) operated in a push-pull mode of operation, so that at least one spatial intensity modulation panel is constantly moving when the other panel is momentarily stationary during modulation panel direction reversal;

Fig. 1122 is a schematic representation of the PLIIM-based system of Fig. 1A embodying a sixth generalized method of reducing the RMS power of observable speckle-noise patterns, wherein the planar laser illumination beam (PLIB) reflected/scattered from the illuminated object and received at the IFD Subsystem is spatial intensity modulated according to a spatial intensity modulation function (SIMF), so that the object (e.g. package) is illuminated with a spatially coherent-reduced laser beam and, as a result, numerous substantially different time-varying (random) speckle-noise patterns are produced and detected over the photo-integration time period of the image detection array, thereby allowing the speckle-noise patterns to be temporally averaged over the photo-integration time period and spatially averaged over the image detection element and the observable speckle-noise pattern reduced;

Fig. 1122A is a schematic representation of the PLIIM-based system of Fig. 1120, illustrating the sixth generalized speckle-noise pattern reduction method of the present invention applied at the IFD Subsystem employed therein, wherein numerous substantially different speckle-noise patterns are produced at the image detection array during the photo-integration time period thereof by spatial intensity modulating the wavefront of the received/scattered PLIB, and the time-varying speckle-noise patterns are temporally and spatially averaged at the image detection array during the photo-integration time period thereof, to thereby reduce the RMS power of speckle-noise patterns observed at the image detection array;

Fig. 1122B is a high-level flow chart setting forth the primary steps involved in practicing the sixth generalized method of reducing observable speckle-noise patterns in PLIIM-based systems, illustrated in Figs. 1120 and 1121A;

Fig. 1123A is a schematic representation of a first illustrative embodiment of the PLIIM-based system shown in Fig. 1120, wherein an electro-optical mechanism is used to generate a rotating maltese-cross aperture (or other spatial intensity modulation plate) disposed before the pupil of the IFD Subsystem, so that the wavefront of the return PLIB is spatial-intensity modulated at the IFD subsystem in accordance with the principles of the present invention;

Fig. 1123³B is a schematic representation of a second illustrative embodiment of the system shown in Fig. 1120, wherein an electro-mechanical mechanism is used to generate a rotating maltese-cross aperture (or other spatial intensity modulation plate) disposed before the pupil of the IFD Subsystem, so that the wavefront of the return PLIB is spatial intensity modulated at the IFD subsystem in accordance with the principles of the present invention;

Fig. 1124 is a schematic representation of the PLIIM-based system of Fig. 1A illustrating the seventh generalized method of reducing the RMS power of observable speckle-noise patterns, wherein the wavefront of the planar laser illumination beam (PLIB) reflected/scattered from the illuminated object and received at the IFD Subsystem is temporal intensity modulated according to a temporal-intensity

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